

Appl. No.08/952,741

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2. (Four times Amended) An isolated DNA molecule, that encodes the amino acid sequence described in SEQ ID NO: 2 or a fragment thereof having α -amylase activity.

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3. (Twice Amended) An isolated DNA molecule encoding a protein exhibiting alkaline liquefying α -amylase activity at a pH optimum of 8-9 and possessing an amino acid sequence obtained by modifying an amino acid sequence described in SEQ ID NO: 2 in a manner in which one or more amino acids are substituted, deleted, or inserted without changing the enzymological properties of the protein having said amino acid sequence described in SEQ ID NO:2 and the protein hydrolyzes 1,4- α -glucosidic linkages in starches, amylose, amylopectin, and degradation products thereof and in amylose forms: glucose (G1), maltose (G2), maltotriose (G3), maltotetrose (G4), maltopentose (G5) and maltohexose (G6) and does not hydrolyze pullulan.

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4. (Twice Amended) The DNA molecule of claim 2 or 3, further comprising a nucleotide sequence for regulating expression of said isolated DNA molecule.

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I₄ 15. (Amended) A recombinant DNA molecule comprising the isolated DNA molecule of claim 3.

I₅ 16. (Amended) A recombinant DNA molecule comprising the isolated DNA molecule of claim 4.

I₆ 20. (Amended) The DNA molecule of claim 3, wherein said encoded protein has an isoelectric point higher than 8.5 when measured by isoelectric focusing electrophoresis.

I₇ 22. (Amended) An isolated DNA molecule encoding a protein exhibiting alkaline liquefying α -amylase activity at a pH optimum of 8-9 comprising at least one nucleotide sequence that is selected from the group consisting of SEQ ID NO: 10, SEQ ID NO: 7, SEQ ID NO: 3, SEQ ID NO: 6 and SEQ ID NO: 9.

23. (Amended) An isolated DNA molecule encoding a protein exhibiting alkaline liquefying α -amylase activity at a pH optimum of 8-9 comprising at least one nucleotide sequence that is the reverse complement of a sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: 4 and SEQ ID NO: 11.

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24. (Amended) An isolated DNA molecule encoding a protein exhibiting alkaline liquefying α -amylase activity at a pH optimum of 8-9 comprising at least one nucleotide sequence selected from the group consisting of SEQ ID NO: 10, SEQ ID NO: 7, SEQ ID NO: 3, SEQ ID NO: 6 and SEQ ID NO: 9, and also comprising at least one nucleotide sequence that is the reverse complement of a sequence selected from the group consisting of SEQ ID NO: 8, SEQ ID NO: 4 and SEQ ID NO: 11.
